CLASSIFICATION SECRET

INFORMATION REPORT

REPORT

CD NO 25X1

COUNTRY East Germany

DATE DISTR 10 January 1955

SUBJECT Research and Development at VEB Hydrierwerk Zeitz

NO OF PAGES 4

PLACE ACQUIRED

NO. OF ENCLS. (LISTED BELOW) 25X1

DATE OF INFO.

SUPPLEMENT TO REPORT NO.

THIS IS UNEVALUATED INFORMATION

"Scientific Research:

"A. General Remarks

The research and technology plan of VEB Hydrierwerk Zeitz for 1954 includes eleven subjects. In the Research and Development Center of the enterprise, six of these subjects are treated by the following:

25X1

Dr. Kuehnhanss (fnu)
Dr. Teubel (fnu)
Dipl. Chem. Reinhardt (fnu)
Eng. Huettig (fnu)
Eng. Dietze (fnu)

The other subjects are treated by the following:

Dr. Schmidt (fnu)
Dr. Wuenther (fnu)
Dr. Greber (fnu)

All projects are carried out in the Departments for High Pressure, Chemical Engineering, and Measurement Installations. Some of the projects deal with fundamental research but most of them concern the finding of methods for developing new production procedures. All of the subjects mentioned were continued during the second quarter of 1954. Summarizing the results, it may be said that the degree of completion of each individual project as established at the beginning of the year was attained during the second quarter of 1954 so that the research and technology plan for this quarter can be considered fulfilled. As for the financial side of research and development, it should be noted that the confirmed plan funds of 1,450,000 DME for 1954 were reduced to 1,305,000 DME by instructions from the Main Administration for Research and Development of the Ministry for Heavy Industry. It is strange that such a

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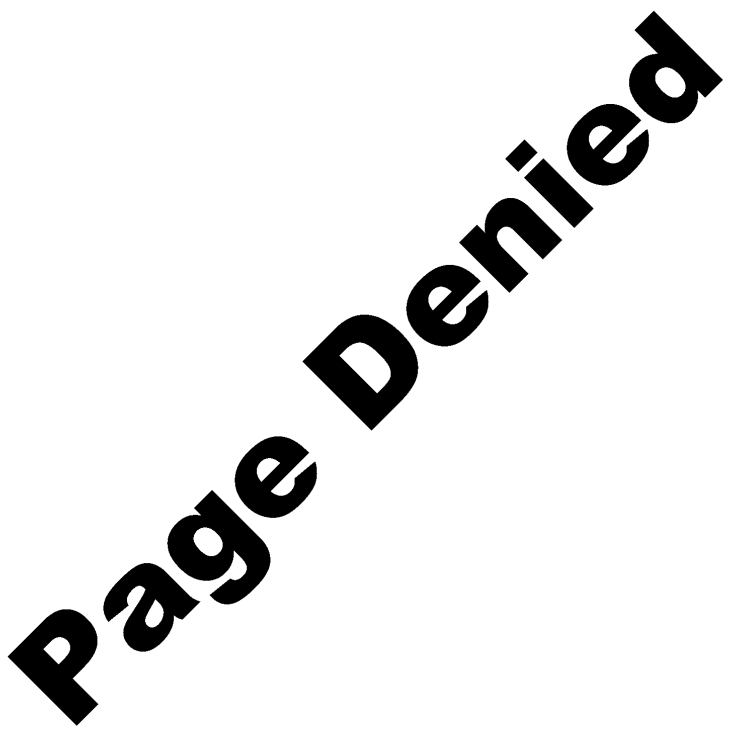

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step was takenafter the plans were established and confirmed and after the work had begun, because this step will naturally make the fulfillment of the Plan questionable. We must ask why under these conditio.. work lasting for weeks must be carried out in order to establish research plans to the last detail. Reduction of the costs of the individual projects is to be carried out by the enterprise accord... to its own judgement. This can only be done by applying the cancellation of 145,000 DME to those projects for which so far relatively little money has been spent. Several projects, however, and in particular the one dealing with "T-ester", will require expenditures to the full extent of the confirmed Plan sums. In the following table, the individual projects are listed with the plan funds as originally confirmed.

B. Table of Research and Development Projects with confirmed Plan Funds and funds spent during the first half of 1954.

Plan Number	Theme	1954 funds spent, thousand DME 1st quarter	1st half	Total funds 1954 thousand DME
F4-01	Analysis of lubricants	13.5	27.4	40
F4-02	Hydrogenation catalysts	7.3	13.8	70
V4-01	TTH procedure	15.4	38.4	125
V4-02	Analysis of hydrocarbons	11.8	28.4	85
V4-03	Processing of light oil	15.3	119.1	320
V4-04	T-ester	62.1	114	240
V4-05	Lubricant refining	16.6	40.2	70
V4-06	Individual hydrocarbons	33.8	69.6	175
V4-07	Thiophen	28	67.5	180
V4-08	X-ray absorption paste	5.7	18.6	40
V4-09	De-ashing of tar	12.7	29.8	105

C. Remarks on the individual projects

1) F4-01: Analysis of Lubricants
A method for determining the components of benzines was applied for the same purpose to oils. The determination is carried out with the aid of three characteristic figures (n, $\frac{d}{s}$, d and M) and through evaluation in triangular coordinates. An attempt was made to find relations between the distribution of carbon, the inclination to age, and the lubricating ability of machine oil from TTH-Abstreifer.

2) F4-02: Hydrogenation Catalysts
Grain studies were carried out bearing on grain volume, the volume of the compact substances and the volume of pores. This work advanced to the point where it can be considered a grain study for high-pressure hydrogenation contacts.

3) V4-01 TTH Procedure
A series of experiments was carried out concerning the influence of temperature, product charge, and gas charge for old catalysts. The results are considered reasonable. Detailed evaluation has not yet been carried out. An apparatus was built for experiments bearing on pressure influence.

4) V4-02: Analysis of Hydrocarbons
The components of per hydrogenated and non-hydrogenated light oil were investigated. Since 1 February 1954, there has been no scientific export for this project, which fact considerably

delays its progress.

5) V4-03: Processing of Light Oil
Experiments on a small scale were continued. Lauchhammer light oil was used. The 100-l apparatus is under construction.

6) V4-04: T-ester
The technological procedure in the provisional installations was improved. Concerning the preparation of urea chloride, the exploitation could be increased to more than 95% at a charge of 5 Mol/hour. Through use of an ethylene-chloride solvent, the urea chloride was prevented from decomposing. Construction of a larger apparatus was technologically prepared and corrosion-resistant equipment was ordered. About 30 kg. of T-acid are being produced per month. Production is dependent upon the delivery by the scheduled date of carbonyl chloride. There are not sufficient pressure bottles available. Chlorine containers with a volume of 200 to 400 liters are urgently needed.

7) V4-05: Lubricant Refining
Experiments were carried out on the selective refining of lubricants with selective solvents (SO_2, kresol, furfurol, etc.). Furthermore, high-viscosity oils were treated with Fuller's earth according to various procedures. In addition, laboratory experiments are under way with the aim of preventing the formation of dark substances (Dunkelstoffe).

8) V4-06: Individual Hydrocarbons
Individual hydrocarbons boiling up to 120° Centigrade and aromates boiling up to 160° Centigrade were quantitatively studied through the application of fine distillation. A number of experiments with selective solvents were carried out for the preparation of pure aromatic hydrocarbons. Various work conditions were also studied, such as the influence of temperature upon the exploitation and concentration of extracts and the results of refining; the amount of solvents required; and the influence of the acting time (Durchlaufzeit) of the solvents.

9) V4-07: Thiophen
The method of preparing thiophen from butane and SO_2 with special contacts was carriedout on a laboratory scale. At present, it is possible through use of a small laboratory installation to prepare about 1 kg. of thiophen in 24 hours. For this, 3.5 kg. of butane and 4.6 kg. of SO_2 is required. The provisional apparatus for the preparation of thiophen from butane and sulfur was completed. This apparatus will be assembled in the new Technikum of the Research and Development Center (building 161).

10) V4-08: X-ray Absorption Paste
Preliminary experiments were carried out with "absorption paste red" for copper and other nonferrous metals. The further development of "absorption paste blue" for aluminum and other light metals is strongly hampered by the delayed arrival of the necessary auxiliary equipment. For instance, the quasi-viscometer is still missing.

25X1

11) V4-09: De-ashing of Tar

Filter tests were improved, with all factors of influence being consi[illegible]. Filtration experiments were carried out on a large technical scale but these are not yet completed. Experiments undertaken on the purifying of tar through sedimentation did not bring any positive results. Experiments for tar purification with the aid of ultrasound are being continued.

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1/ [redacted] Comment: The enterprise was under SAG administration until 31 December 1953.

2/ [redacted] Comment: TTH means Tieftemperaturhydrierung. (low temperature hydrogenation.

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CENTRAL INTELLIGENCE AGENCY

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